

CLAIM LISTING

This listing of the claims, if entered, replaces all prior versions of the claims in the present application.

1. (Previously Presented) A method comprising:
establishing bi-directional connectivity of a network element in a network, comprising
receiving a first unreliable packet from said network element;
storing an address of said network element in a neighbor pending list, in response
to receiving the first unreliable packet;
sending a reliable packet to said network element; and
if an acknowledgement to said reliable packet is received from said network
element, accepting said network element as a neighbor.

2-3. (Canceled)

4. (Original) The method of claim 1, wherein said accepting said network element
as neighbor is done by moving said address of said network element from said neighbor pending
list to a neighbor list.

5. (Original) The method of claim 4, further comprising:
if said address of said network element is in said neighbor list,
updating a neighbor hold count for said network element.

6. (Original) The method of claim 1, further comprising:
determining if said address of said network element is in a dampening list.

7. (Original) The method of claim 6, further comprising:

if said address of said network element is in said dampening list,
updating a value of a reliability count of said network element to reflect higher
reliability of said network element.

8. (Original) The method of claim 7, further comprising:
if said value of said reliability count is a maximum value,
moving said address of said network element from said dampening list to said
neighbor pending list.

9. (Original) The method of claim 8, wherein said maximum value is
predetermined.

10. (Original) The method of claim 8, wherein said maximum value is dynamically
adjusted according to a traffic condition in said network.

11. (Currently Amended) The method of claim [[6]] 8, further comprising:
if said network element is not in said dampening list,
adding said address of said network element to said dampening list, and
setting said value of said reliability count of said network element to said
maximum value.

12. (Original) The method of claim 11, further comprising:
setting said neighbor hold count for said network element; and
sending a second unreliable packet to said network element.

13. (Currently Amended) The method of claim [[1]] 7, further comprising:
initiating a neighbor pending timer.

14. (Currently Amended) The method of claim [[12]] 13, further comprising:
if said acknowledgement to said reliable packet is not received before said neighbor
pending timer expires,

removing said address of said network element from said neighbor pending list,
and

updating said value of said reliability count to reflect lower reliability of said
network element.

15. (Currently Amended) The method of claim [[12]] 13, further comprising:
if said acknowledgement to said reliable packet is received before said neighbor pending
timer expires,
moving said address of said network element from said neighbor pending list to
said neighbor list, and
removing said address of said network element from said dampening list.

16. (Previously Presented) A system for establishing bi-directional connectivity with
a network element in a network comprising:
a central processing module;
a neighbor pending list coupled to said central processing module, wherein said central
processing module is configured to store an address of said network element in
said neighbor pending list while said network element is in a process of
establishing said bi-directional connectivity with said system; and
a dampening list coupled to said central processing module, wherein
said dampening list is configured to store said address of said network element
when a value of a reliability count is lower than a maximum value, and
said maximum value is dynamically adjusted according to a traffic condition in
said network.

17. (Original) The system of claim 16, further comprising:
an input-output module coupled to said central processing module, wherein said input-
output module is configured to provide input-output interface to said central
processing module; and
a counter module coupled to said central processing module, wherein said counter
module is configured to provide at least one of timing and counting functionality
to said central processing module.

18. (Previously Presented) The system of claim 16, further comprising:
a neighbor list coupled to said central processing module, wherein said neighbor list is
configured to store said address of said network element after said bi-directional
connectivity is established with said network element.

19-20. (Canceled)

21. (Currently Amended) A network device comprising:
a processor; and
a network interface coupled to said processor, wherein
said processor network interface is configured to receive a first unreliable packet
from [[said]] a network element, and
said processor is configured to:
store an address of said network element in a neighbor pending list, in
response to receipt of the first unreliable packet,
send a reliable packet to said network element, and
accept said network element as a neighbor, if an acknowledgement to said
reliable packet is received from said network element.

22-23. (Canceled)

24. (Original) The network device of claim 21, wherein said accepting said network
element as neighbor is done by moving said address of said network element from said neighbor
pending list to a neighbor list.

25. (Original) The network device of claim 24, wherein said processor is further
configured to

if said address of said network element is in said neighbor list,
update a neighbor hold count for said network element.

26. (Original) The network device of claim 21, wherein said processor is further
configured to

determine if said address of said network element is in a dampening list.

27. (Original) The network device of claim 26, wherein said processor is further configured to

if said address of said network element is in said dampening list,
update a value of a reliability count of said network element to reflect higher
reliability of said network element.

28. (Original) The network device of claim 27, wherein said processor is further configured to

if said value of said reliability count is a maximum value,
move said address of said network element from said dampening list to said
neighbor pending list.

29. (Original) The network device of claim 28, wherein said maximum value is predetermined.

30. (Original) The network device of claim 28, wherein said maximum value is dynamically adjusted according to a traffic condition in said network.

31. (Currently Amended) The network device of claim [[26]] 28, wherein said processor is further configured to

if said network element is not in said dampening list,
add said address of said network element to said dampening list, and
set said value of said reliability count of said network element to said maximum
value.

32. (Currently Amended) The network device of claim [[31]] 25, wherein said processor is further configured to

set said neighbor hold count for said network element; and
send a second unreliable packet to said network element.

33. (Currently Amended) The network device of claim [[31]] 21, wherein said processor is further configured to further comprising:

initiate a neighbor pending timer.

34. (Currently Amended) The network device of claim [[32]] 33, wherein said processor is further configured to

if said acknowledgement to said reliable packet is not received before said neighbor pending timer expires,

remove said address of said network element from said neighbor pending list, and update [[said]] a value of [[said] a reliability count to reflect lower reliability of said network element.

35. (Currently Amended) The network device of claim [[32]] 33, further comprising: if said acknowledgement to said reliable packet is received before said neighbor pending timer expires,

move said address of said network element from said neighbor pending list to [[said]] a neighbor list, and

remove said address of said network element from [[said]] a dampening list.

36. (Previously Presented) A network device comprising:

means for establishing bi-directional connectivity of a network element in a network, comprising

means for receiving a first unreliable packet from said network element;

means for storing an address of said network element in a neighbor pending list, in response to receiving the first unreliable packet;

means for sending a reliable packet to said network element; and

means for accepting said network element as a neighbor if an acknowledgement to said reliable packet is received from said network element.

37-38. (Canceled)

39. (Original) The network device of claim 36, wherein said accepting said network element as neighbor is done by moving said address of said network element from said neighbor pending list to a neighbor list.

40. (Original) The network device of claim 39, further comprising:
means for updating a neighbor hold count for said network element if said address of said network element is in said neighbor list.

41. (Original) The network device of claim 36, further comprising:
means for determining if said address of said network element is in a dampening list.

42. (Original) The network device of claim 41, further comprising:
means for updating a value of a reliability count of said network element to reflect higher reliability of said network element if said address of said network element is in said dampening list.

43. (Currently Amended) The network device of claim 42, further comprising:
means for moving said address of said network element from said dampening list to said neighbor pending list if said value of said reliability count is a maximum value.

44. (Original) The network device of claim 43, wherein said maximum value is predetermined.

45. (Original) The network device of claim 43, wherein said maximum value is dynamically adjusted according to a traffic condition in said network.

46. (Currently Amended) The network device of claim [[41]] 42, further comprising:
means for adding said address of said network element to said dampening list if said network element is not in said dampening list, and
means for setting said value of said reliability count of said network element to said maximum value if said network element is not in said dampening list.

47. (Currently Amended) The network device of claim [[46]] 36, further comprising:
means for setting [[said]] a neighbor hold count for said network element; and
means for sending a second unreliable packet to said network element.

48. (Original) The network device of claim 36, further comprising:
initiating a neighbor pending timer.

49. (Currently Amended) The network device of claim [[47]] 48, further comprising:
means for removing said address of said network element from said neighbor pending list
if said acknowledgement to said reliable packet is not received before said
neighbor pending timer expires, and
means for updating said value of [[said]] a reliability count to reflect lower reliability of
said network element if said acknowledgement to said reliable packet is not
received before said neighbor pending timer expires.

50. (Currently Amended) The network device of claim [[47]] 48, further comprising:
means for moving said address of said network element from said neighbor pending list
to [[said]] a neighbor list if said acknowledgement to said reliable packet is
received before said neighbor pending timer expires, and
means for removing said address of said network element from [[said]] a dampening list
if said acknowledgement to said reliable packet is received before said neighbor
pending timer expires.

51. (Previously Presented) A computer program product for establishing bi-
directional connectivity of a network element in a network, encoded in computer readable media,
said program product comprising a set of instructions executable on a computer system, said set
of instructions configured to

receive a first unreliable packet from said network element;
store an address of said network element in a neighbor pending list, in response to receipt
of the first unreliable packet;
send a reliable packet to said network element; and
if an acknowledgement to said reliable packet is received from said network element,
accept said network element as a neighbor.

52-53. (Canceled)

54. (Original) The computer program product of claim 51, wherein said accepting
said network element as neighbor is done by moving said address of said network element from
said neighbor pending list to a neighbor list.

55. (Previously Presented) The computer program product of claim 54, wherein said
set of instructions is further configured to:

if said address of said network element is in said neighbor list,
update a neighbor hold count for said network element.

56. (Original) The computer program product of claim 51, wherein said set of
instructions is further configured to:

determine if said address of said network element is in a dampening list.

57. (Original) The computer program product of claim 56, wherein said set of
instructions is further configured to:

if said address of said network element is in said dampening list,
update a value of a reliability count of said network element to reflect higher
reliability of said network element.

58. (Original) The computer program product of claim 57, wherein said set of
instructions is further configured to:

if said value of said reliability count is a maximum value,

move said address of said network element from said dampening list to said neighbor pending list.

59. (Original) The computer program product of claim 58, wherein said maximum value is predetermined.

60. (Original) The computer program product of claim 58, wherein said maximum value is dynamically adjusted according to a traffic condition in said network.

61. (Currently Amended) The computer program product of claim [[56]] 58, wherein said set of instructions is further configured to:

if said network element is not in said dampening list,
add said address of said network element to said dampening list, and
set said value of said reliability count of said network element to said maximum value.

62. (Currently Amended) The computer program product of claim 61, wherein said set of instructions is further configured to:

set [[said]] a neighbor hold count for said network element; and
send a second unreliable packet to said network element.

63. (Original) The computer program product of claim 51, wherein said set of instructions is further configured to:

initiate a neighbor pending timer.

64. (Currently Amended) The computer program product of claim [[62]] 63, wherein said set of instructions is further configured to:

if said acknowledgement to said reliable packet is not received before said neighbor pending timer expires,
remove said address of said network element from said neighbor pending list, and

update [[said]] a value of [[said]] a reliability count to reflect lower reliability of said network element.

65. (Currently Amended) The computer program product of claim [[62]] 63, wherein said set of instructions is further configured to:

if said acknowledgement to said reliable packet is received before said neighbor pending timer expires,

move said address of said network element from said neighbor pending list to [[said]] a neighbor list, and

remove said address of said network element from [[said]] a dampening list.